

SEQUENCE LISTING

<110>Suntory Limited et al.

<120>Proess for production of yellow flowers by control of flavonoid synthesis system

<130>P952

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<223>Nucleic acid in pSPB1725

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gaa gaa cac ctc aac tct tca ata gcc ctt gca aag ttc ata acc aaa 96

Glu Glu His Leu Asn Ser Ser Ile Ala Leu Ala Lys Phe Ile Thr Lys

20 25 30

cac cac tct tca atc tcc atc act atc atc agc act gcc ccc gcc gaa 144

His His Ser Ser Ile Ser Ile Thr Ile Ile Ser Thr Ala Pro Ala Glu

35 40 45

tct tct gaa gtg gcc aaa att att aat aat ccg tca ata act tac cgc 192

Ser Ser Glu Val Ala Lys Ile Ile Asn Asn Pro Ser Ile Thr Tyr Arg

50 55 60

ggc ctc acc gcg gta gcg ctc cct gaa aat ctc acc agt aac att aat 240

Gly Leu Thr Ala Val Ala Leu Pro Glu Asn Leu Thr Ser Asn Ile Asn

65 70 75 80

aaa aac ccc gtc gaa ctt ttc ttc gaa atc cct cgt cta caa aac gcc 288

Lys Asn Pro Val Glu Leu Phe Phe Glu Ile Pro Arg Leu Gln Asn Ala

85 90 95

aac ctt cga gag gct tta cta gat att tcg cga aaa tcc gat atc aaa 336

Asn Leu Arg Glu Ala Leu Leu Asp Ile Ser Arg Lys Ser Asp Ile Lys

100 105 110

gca tta atc atc gat ttc ttc tgc aat gcg gca ttt gaa gta tcc acc	384
Ala Leu Ile Ile Asp Phe Phe Cys Asn Ala Ala Phe Glu Val Ser Thr	
115 120 125	
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Ser Met Asn Ile Pro Thr Tyr Phe Asp Val Ser Gly Gly Ala Phe Leu	
130 135 140	
ctc tgc acg ttt ctc cac cac ccg aca cta cac caa act gtt cgt gga	480
Leu Cys Thr Phe Leu His His Pro Thr Leu His Gln Thr Val Arg Gly	
145 150 155 160	
gac att gcg gat ttg aac gat tct gtt gag atg ccc ggg ttc cca ttg	528
Asp Ile Ala Asp Leu Asn Asp Ser Val Glu Met Pro Gly Phe Pro Leu	
165 170 175	
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Ile His Ser Ser Asp Leu Pro Met Ser Leu Phe Tyr Arg Lys Thr Asn	
180 185 190	
gtt tac aaa cac ttt cta gac act tcc tta aac atg cgc aaa tcg agt	624
Val Tyr Lys His Phe Leu Asp Thr Ser Leu Asn Met Arg Lys Ser Ser	
195 200 205	
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Gly Ile Leu Val Asn Thr Phe Val Ala Leu Glu Phe Arg Ala Lys Glu	
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Ser His Thr Ile Ala Glu Pro His Asp Thr Lys Val Leu Val Asn Gln	
245 250 255	
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His Glu Cys Leu Ser Trp Leu Asp Leu Gln Pro Ser Lys Ser Val Ile	
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Phe Leu Ser Arg Thr Lys Gly Val Gly Phe Val Thr Asn Thr Trp Val	
325 330 335	
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Pro Gln Lys Glu Val Leu Ser His Asp Ala Val Gly Gly Phe Val Thr	
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His Cys Gly Trp Ser Ser Val Leu Glu Ala Leu Ser Phe Gly Val Pro	
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Phe Val Thr Ala Met Glu Leu Glu Lys Arg Val Arg Glu Leu Met Glu	
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Ser Thr Lys Ala Ala Val Ser Lys Gly Gly Ser Ser Leu Ala Ser Leu	
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<223>Amino acid sequence of 4,2',4',6'-tetrahydroxychalcane 4'-O-glycosyltransferase encoded in pSPB1725

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Ser Ser Glu Val Ala Lys Ile Ile Asn Asn Pro Ser Ile Thr Tyr Arg
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Gly Leu Thr Ala Val Ala Leu Pro Glu Asn Leu Thr Ser Asn Ile Asn
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Lys Asn Pro Val Glu Leu Phe Phe Glu Ile Pro Arg Leu Gln Asn Ala
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Leu Cys Thr Phe Leu His His Pro Thr Leu His Gln Thr Val Arg Gly
          145            150            155            160
Asp Ile Ala Asp Leu Asn Asp Ser Val Glu Met Pro Gly Phe Pro Leu
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Ile His Ser Ser Asp Leu Pro Met Ser Leu Phe Tyr Arg Lys Thr Asn
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Val Tyr Lys His Phe Leu Asp Thr Ser Leu Asn Met Arg Lys Ser Ser
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168

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Ile	Ser	Met	Thr	Ile	Ile	Ser	Thr	Ala	Ala	Phe	Pro	Ser	Ser	Ala	Ala	
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Phe	Glu	Val	Ser	Arg	Ser	Leu	Asn	Ile	Pro	Thr	Phe	Phe	Glu	Ala	Ser	
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Gly Asn Gly Glu Pro Asp Leu Ser Val Val Leu Pro Glu Gly Phe Leu	
305 310 315	
gag aga acc aaa gat att ggg ctg gtg ata acg aca tgg gcg ccg cag	1128
Glu Arg Thr Lys Asp Ile Gly Leu Val Ile Thr Thr Trp Ala Pro Gln	
320 325 330	
aaa gag gtg tta agc cat gtg gcc gtg tgt gga ttt gtg acg cac tgc	1176
Lys Glu Val Leu Ser His Val Ala Val Cys Gly Phe Val Thr His Cys	
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Gly Trp Asn Ser Val Leu Glu Ala Val Ser Phe Gly Val Pro Met Ile	
355 360 365	
ggg tgg ccg ctg tac gca gag cag agg atg aat cgg gtg ttt atg gtg	1272
Gly Trp Pro Leu Tyr Ala Glu Gln Arg Met Asn Arg Val Phe Met Val	
370 375 380	
gag gaa ata aag gtg gca ttg cct ttg gag gag gag gcg gat ggg ttg	1320

Glu Glu Ile Lys Val Ala Leu Pro Leu Glu Glu Glu Ala Asp Gly Leu	
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395	
gtg agg gcg aca gaa ttg gag aag cgg gtg aga gag ttg acc gag tcc	1368
Val Arg Ala Thr Glu Leu Glu Lys Arg Val Arg Glu Leu Thr Glu Ser	
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410	
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Val Arg Gly Lys Ala Val Ser Arg Arg Val Glu Glu Met Arg Leu Ser	
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425	430
gca gag aag gcc gtg agc aag ggt gga acg tcg ctg att gca ttg gag	1464
Ala Glu Lys Ala Val Ser Lys Gly Gly Thr Ser Leu Ile Ala Leu Glu	
435	440
445	
aaa ttc atg gac tcg att act cta taagcgtaag agttgctata aatttagcta	1518
Lys Phe Met Asp Ser Ile Thr Leu	
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catattaata tgttattatt tatgtgaaca aaaaatatta ttgctcaagt tattttgaat	1938
tatattttta tatatataag tatttgatat aaaatattta acgtattatg tgcgtatcct	1998
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gtgcccgtgt ccgtgcaata tagtaaatta gttatggat gtgatgtttc tatgttgtaa	2118
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<212>PRT

<213>Linaria bipartita

<220>

<223>Amino acid sequence of 4'CGT of linaria bipartita

<400>70

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Thr Ile Ala Leu Ala Lys Phe Ile Ser Lys His His Pro Ser Ile Ser
 20 25 30
 Met Thr Ile Ile Ser Thr Ala Ala Phe Pro Ser Ser Ala Ala Val Leu
 35 40 45
 Pro Lys Thr Ile Ser Tyr His Pro Leu Pro Ala Val Pro Met Pro Pro
 50 55 60
 Asn Leu Ser Ser Asn Pro Val Glu Phe Leu Phe Glu Ile Pro Arg Leu
 65 70 75 80
 His Asn Thr Lys Leu Arg Glu Ala Leu Glu Arg Ile Ser Glu Thr Ser
 85 90 95
 Lys Ile Lys Ala Leu Val Ile Asp Phe Phe Cys Asn Ser Ala Phe Glu
 100 105 110
 Val Ser Arg Ser Leu Asn Ile Pro Thr Phe Phe Glu Ala Ser Leu Gly
 115 120 125
 Ala Ser Gly Leu Cys Glu Phe Leu Tyr His Pro Thr Phe His Lys Thr
 130 135 140
 Val Pro Gly Asp Ile Ala Asp Phe Asn Asp Phe Leu Glu Ile Pro Gly
 145 150 155 160
 Cys Pro Pro Leu His Ser Ala Asp Val Pro Lys Gly Leu Phe Arg Arg
 165 170 175
 Lys Thr Ile Ala Tyr Lys His Phe Leu Asp Thr Ala Asn Asn Met Arg
 180 185 190
 Met Ser Ser Gly Ile Leu Leu His Ala Phe Asp Ala Leu Glu Tyr Arg
 195 200 205
 Ala Lys Glu Ala Leu Ser Asn Gly Leu Cys Asn Pro Asp Gly Pro Thr
 210 215 220
 Pro Pro Val Tyr Phe Val Ser Pro Thr Val Ala Glu Thr Leu Ala Tyr
 225 230 235 240
 Arg Glu Asn Thr Ala Ala Leu Arg His Glu Cys Leu Thr Trp Leu Asp
 245 250 255
 Leu Gln Pro Asp Lys Ser Val Ile Phe Leu Cys Phe Gly Arg Arg Gly
 260 265 270
 Thr Phe Ser Met Gln Gln Leu His Glu Ile Ala Val Gly Leu Glu Arg
 275 280 285
 Ser Gly Arg Arg Phe Leu Trp Ala Ile Arg Ser Ser Gly Ala Gly Asn
 290 295 300

Gly Glu Pro Asp Leu Ser Val Val Leu Pro Glu Gly Phe Leu Glu Arg
 305 310 315 320
 Thr Lys Asp Ile Gly Leu Val Ile Thr Thr Trp Ala Pro Gln Lys Glu
 325 330 335
 Val Leu Ser His Val Ala Val Cys Gly Phe Val Thr His Cys Gly Trp
 340 345 350
 Asn Ser Val Leu Glu Ala Val Ser Phe Gly Val Pro Met Ile Gly Trp
 355 360 365
 Pro Leu Tyr Ala Glu Gln Arg Met Asn Arg Val Phe Met Val Glu Glu
 370 375 380
 Ile Lys Val Ala Leu Pro Leu Glu Glu Glu Ala Asp Gly Leu Val Arg
 385 390 395 400
 Ala Thr Glu Leu Glu Lys Arg Val Arg Glu Leu Thr Glu Ser Val Arg
 405 410 415
 Gly Lys Ala Val Ser Arg Arg Val Glu Glu Met Arg Leu Ser Ala Glu
 420 425 430
 Lys Ala Val Ser Lys Gly Gly Thr Ser Leu Ile Ala Leu Glu Lys Phe
 435 440 445
 Met Asp Ser Ile Thr Leu
 450